1. *Electrotonus,* writes the author, was discovered sixty years ago. Although physiologists in general attribute its discovery to du Bois Reymond, Dr. Wiasemski attempts to show that on the part of du Bois Reymond there was no discovery of the extra-polar currents in 1843, as their existence had been known since 1842, having been recognized and described by Longet and Guérard as "*derivation currents.*" While du Bois Reymond's theory of the nature of the electrotonic currents has been entirely abandoned by physiologists, Lanset's opinion of the nature of the extra polar currents has been developed, although in a modified form, to form the fundamental basis of the theories of Grünhagen and of Hermann. Therefore, to Longet and Guérard the credit of the original discovery should be given.

2. *Law of Nerve Excitability.*—Having shown that Weiss' law holds good for both man and the lower animals, the author contributes a further investigation as to whether or not this law still prevails in frog nerves some days after division. From his results he finds: (1) The formula of Weiss, $Q=a+bt$ is always as correct for the distal portion of the divided nerve as for the normal nerve. (2) If one compares the formulas obtained with the same pole in both cases, the co-efficients a and b are much smaller for the divided nerve than for the normal nerve. (3) If the formulas obtained with the two poles in both cases, the co-efficients a and b, which have a minimum value with the active negative electrode on the healthy side, have, on the contrary, a minimum value with the active positive electrode on the side with the divided nerve. After curarization of a nerve where hypo-excitability and inversion of the formular occur, the coefficients a and b are much greater than in the normal state.

3. Not suitable for abstracting.

4. *Acoustic Nerve Reactions.*—In this contribution to practical electro-therapy the author fully discusses Brenner's, Erb's and Duchenne's methods of using the galvanic and faradic currents in the diagnosis and treatment of ear diseases. The author admits that in normal ears a reaction of the acoustic nerve is not only difficult to obtain but is usually absent even though the intensity of the current is increased to the limit of toleration. When a sonorous reaction is readily obtained with currents of 5 or 6 m.a., where the presence of disease of the external and middle ear can be excluded, hyperemia of the labyrinth or of the acoustic nerve should be suspected. In the treatment of hysterical deafness, tinnitus, and auditory vertigo the continuous or uninterrupted galvanic current, applied according to Erb's method, will frequently produce decided amelioration, or possibly a definite cure of the symptoms. For subacute and chronic middle ear disease faradization is to be preferred.

5. After twenty-nine applications of the X rays to an extensive cancer of the breast, the patient continued to get worse and finally died, although during the treatment the edema and pain in the affected region disappeared.

6. A description of various varieties of electro-medical and X ray apparatus exhibited at a meeting of the physical society.

R. H. CUNNINGHAM (New York).

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1. Results of a Fracture at the Base of the Skull; Apparent Recovery and Death after 17 Years in Dementia and Total Epilepsy. D. ANGLADE and G. CHOCREAUX.

2. Facial Hemiatrophy in Its Relations with Lesions of the Inferior Cervical Ganglion. BOUVEYRON.

1. *Fracture at the Base of the Skull.*—After a very minute report of the case the authors sum up. "First there is the very commonplace accident of a man's falling from his horse and fracturing the base of the skull; he suffered only two months with deafness and facial paralysis on the left side. For over four years he worked as usual, then was suddenly seized with true attacks of generalized epilepsy. The faculties little by little give way, the patient became irritable and impulsive in his dementia, and was confined. At the hospital he behaved like a maniac, incapable of understanding or speaking. Epileptic attacks were almost daily, convulsions generalized. Cachexia extended to all the organs, and the patient succumbed at the age of thirty-eight, seventeen years after the accident, about two after the onset of epilepsy and mental trouble. So much for the clinical facts. The anatomo-pathological statements offer no less interest. How are the symptoms to be accounted for? In the region of fracture, on each side and in the middle part of the third temporo-occipital convolution, there was simply a little line of softening. In the right hemisphere the zones of softening involved the frontal lobe, *influenced it more;* the temporal lobe in its sphenoidal extremity, the inferior third of the two ascending convolutions, and covering these lesions was a very thick dura mater, showing with pachymeningitis. The vessels of the pia matter were obliterated at the circumference of the focus of softening.

What had taken place? Seemingly there was a crack without great displacement of the fragments, hence, facial paralysis and deafness. There was no infection at the time of the accident, but this followed slowly, consequently meningitis, vascular thromboses, softenings and similar symptoms; epilepsy and dementia. Epilepsy might strictly be explained by extended and deep lesion of the frontal lobe; but not if this were partial, since the destructive lesions were unilateral. The microscope explains the fact.

If the macroscopic lesion predominates in front and in the right hemisphere reaches only a little way into the Rolandic zone, inflammation, denoting a violent reaction, begins behind. This was very marked near the paracentral lobule. Perhaps in this diffusion a lesion distinct from inflammatory reactions, and occasioned by some irritant, such as a tumor or abscess, lies the explanation of the epilepsies which occur in patients whose motor zones appear healthy on post-mortem. It must not be forgotten, say the authors, that the present patient showed total epilepsy, which was possibly because the inflammatory reaction passed to the opposite side. This reaction was not alone in the brain. It was found, coincident with important vascular lesions in the protuberance, bulb and in the cervical medulla.

2. *Facial Hemiatrophy.*—In two women, aged respectively thirty-six and twenty-three years, facial hemiatrophy was seen to immediately follow tuberculous lesions of the corresponding apex. The elder, strong and vigorous, with no diseased inheritance or loss or nerve force, but a widow of a phthisical and remarried to a tuberculous patient, became infected with tuberculosis. The lesions were exclusively in the left lung, especially at the apex. Fever and stitch in the side forced her to go bed, and when she arose, about twenty days later, she saw herself that her left cheek was thinner and more hollow than the right. While she had been in bed its skin had seemed "crisp." From that time atrophy of the orbital cavity, face and the greater part of the left side of the neck to the clavicle increased; later it reached over the left side of

the thorax below the breast, encroaching upon the left arm; the patient felt no special pain, neither saw spots nor change of color in the atrophied region. Always cold, she interpreted it as a feeling of shrivelling, or of a mask on her skin. There was no motor paralysis or anesthesia, but perspiration ceased in the atrophied region, little by little, and the skin became much more dry than in the healthy regions on the other side. There was no sensorial trouble. In August, 1899, the symptoms justified a diagnosis of a pleuro-pulmonary lesion, more pleural than pulmonary. The right lung was still normal. While the profile from the right seemed to show the patient as younger, seen from the left she looked sixty. The thin skin was stuck to the adjacent tissues, and it was hard to raise it or fold it. The temple, orbital cavity and the neck on the left as far as the clavicle were entirely atrophied, and this atrophy seemed to reach all the surrounding tissues. On the right the eyelid drooped, although it was not paralyzed, and the reactions of the pupil were normal. The cheek bone, inferior maxilla, masseter and sterno-mastoid of that side seemed atrophied. Slight atrophy attacked the left arm and thoracic region below the breast. Muscle contracted on faradization, and there was no paralysis of sense or movement, although there were sometimes spontaneous fascicular contractions under the influence of cold in muscles of the face. Perspiration was not secreted on the left side even under most violent exercise or heat influences. Since August, 1899, this hemiatrophy has remained the same, uninfluenced by electric or any other treatment.

The second case was of a young woman whose father had fibrous pulmonary tuberculosis with unilateral chronic sciatica, and whose family history included hysteria and pulmonary bacillosis of congestive form without expectoration. In June, 1899, she was attacked by bacillosis of febrile character, localized at the apex of the left lung. Simultaneously she had neuralgic pain in the left side of face and neck; all nerve endings in these regions were extremely sensitive to touch or to draught, and when thus influenced her skin became very warm and red, the left eye became filled with tears and bloodshot, the left nostril secreted abundantly, and the left side of the mouth secreted a thick and viscous saliva like the white of an egg. At the same time there was cardiac acceleration, pulse increased even from 62 to 133 to the minute. The skin of both hands had become habitually cyanosed and cold, and there was very evident palmar hyperhidrosis; there was marked gastric hyperesthesia, and eating was immediately followed by acute pain. At the beginning of the pleuropulmonary attack, these painful and uninterrupted paroxysms were accompanied by a rise in temperature which varied between 38 deg. C. in the morning, and 39 deg. C. in the evening. At the same time the left apex certainly showed lesions of pleuropulmonary tuberculosis. A new and extraordinary point with this was a very strong breathy sound which extended through the entire track of the left subclavicular artery. There were also very slight but frequent hemotyses.

A fortnight after the last attack the left side of face and neck to the clavicle began to atrophy in comparison with the healthy regions corresponding. For six months this cervicofacial hemiatrophy increased with almost unbearable pain, but at the end of this time the pain seemed to diminish. Repeated revulsion with hot needles was performed on the left apex, hoping to affect the inferior cervical ganglion which the author believed to be the source of all the trouble, and which he supposed was imbedded in a tuberculous pachypleuritic tissue. Nevertheless the therapeutic success was not pronounced enough to affirm with certitude that the sedation of the painful periods was any more the result of intervention than of the natural progress of the affection. At this time the disease seemed to remain stationary. The pleuropulmonary lesions were improved, permanent cold and cyanosis of limbs disappeared and the other symptoms were diminished. Nine months after the onset of hemiatrophy the patient made a pilgrimage to Lourdes and came back free, she said, from all suffering; indeed the psychical improvement was considerable. Moral depression gave way to great hope, and under the influence of the new mental orientation the patient was seized with bulimia, which helped not a little in overcoming the tuberculous lesions. In March, 1900, there was diminution of respiration in the left apex, in the supraspinal fossa as well as in the supraclavicular. The vibrations there were less than in the corresponding side, but there were few râles. The eye remained as before. The temporal fossa and the left cheek had deep hollows, and the skin was adherent to the tissues. The muscles and skin remained as formerly, except for slightly increased dryness. Hair, which in the front parietal region had dried and fallen out while the illness was augmenting, now grew naturally; and most remarkably a frontoparietal hyperstosis, very painful to pressure and like diffuse periostosis, though the patient was free from syphilis, disappeared without specific treatment at the same time that the hair began to grow again.

To interpret these two observations, one must recall, says the author, the situation and branches of the inferior cervical ganglion. This, really a thoracic ganglion, is situated in a small hollow which forms the top of the parietal pleura with which it is in direct relation, and one will see that it may be involved in the processes of pachypleurite of which the apex of the lung may be the source. On the other hand, it is in relation with the articulation of the head of the first side, the first dorsal vertebra, and behind that are the inferior verves of the brachial plexus. Finally, before this in the infraclavicular artery, which Vieussens' valve, when it exists, surrounds completely. Ordinarily it receives the ramifications of the last two cervical verves and of the first dorsal. From this ganglion also radiate the superior fibers which form the vertebral nerve and the anastomose fibers which may be in relation with the carotid plexus through the intervention of the superior cervical ganglion; then the external fibers which follow the vessels of the arm, and finally the internal fibers, to the inferior cardiac nerve or the third cardiac nerve. This distribution and anatomical relation, explain why the patients showed: (1) vasomotor troubles, trophic and secretory of the left half of the face and neck; (2) cold cyanosis and hyperhidosis of arms; (3) crises of cardiac acceleration. The sound of the left subclavicular artery which surrounds Vieussens' valve is explained very well also by a pleuropulmonary infiltration near by. It is judged, then, that the symptoms presented by both patients were the result of a lesion of the inferior cervical ganglion; and it is thought that the lesion was attributable to a process of tuberculous pachypleuritis surrounding this ganglion. JELLIFFE.

MISCELLANY.

EXCISION OF THE SPINE BIFIDA AND ENCEPHALOCELE. John Lithgow (British Medical Journal, January 18, 1902).

Within the past few years the old method of treatment for these affections by injection of Morton's fluid has been almost discarded for the newer and more surgical method of excision. The author reports a case of spina bifida of meningocele variety about the size of a hen's egg. During spasms of whooping cough the tension in the sac became so great that there was danger of rupture, so when the spasmodic